

# FluoroSeal



## LINED BUTTERFLY VALVES

**ANSI/ASME/DIN/PED  
PFA LINED  
LUG AND WAFER TYPE**

Rated 150 psig/10 bar

## PRODUCT OVERVIEW

FluoroSeal

Due to its specially contoured disc profile, the FluoroSeal® fully PFA-lined butterfly valve offers high flow rates with minimal pressure drop throughout the entire range of disc rotation. Positive, bubble tight, bi-directional shut off is assured due to the elastomeric energized seat. With a standard live-loaded stem seal, tight control of fugitive emissions to atmosphere is maintained in both high cycle applications and those applications with temperature gradients. An engineered atmospheric seal at the stem prevents the ingress of foreign material into the packing chamber. Low operating torque is achieved via precision shaft bearings in combination with the spherical seat design. Excellent corrosion resistance is provided by the GF2P lined body and the securely anchored, PFA lined disc. A standard stem extension allows the valve to be installed in insulated applications without the need for a bolt on extension. An integral, one piece disc-shaft core eliminates lost motion during operation. A "Double D" drive shaft and ISO 5211 mounting pad allow for easy and cost effective automation.

### **FluoroSeal® lined butterfly valves offer increased value by incorporating advanced design features:**

- **ROBUST DESIGN AND CONSTRUCTION**

Superior standard material offering of A216 Gr. WCB two-piece carbon steel body and its one-piece disc/shaft in A995 Gr. CD4MCuN duplex, stainless steel (2"-16") or A516 Grade 70 carbon steel (18"-24"), the FluoroSeal lined butterfly valve is designed for long service life in difficult and demanding applications.

- **BI-DIRECTIONAL IN-LINE BUBBLE TIGHT SEALING**

With multiple sealing features and concentric design, the FluoroSeal lined butterfly valve offers bubble-tight in-line sealing in either direction, making it a true bi-directional valve.

- **GF2P BODY LINER**

The standard molecularly-enhanced GF2P body liner offers increased wear and chemical resistance, low creep, low cold flow, and low permeation properties, while ensuring tight in-line and atmospheric sealing over the life of the valve.

- **ENERGIZED BODY LINER SEAT**

The silicon backup seat (Viton available as an option) provides elastic loading to the GF2P liner, ensuring long term, robust, bubble-tight sealing over the life of the valve.



8" FluoroSeal ASME Class 150 Lined Butterfly Valve Wafer type with Pneumatic Actuator

### • MULTIPLE BEARINGS

A series of teflon-coated journal bearings support the shaft along its length, providing for low operating torque and precise shaft alignment which ensures repeatable and robust shaft sealing.

### • BLOW-OUT PROOF SHAFT (1)

A hard shoulder on the shaft ensures shaft retention in case of failure.

### • ANTI-STATIC DEVICE (2)

A press-fit metal disc ensures electrical continuity between the valve shaft and body.

### • LIVE-LOADED SHAFT SEALS

With both top and bottom live-loaded shaft seals, the FluoroSeal lined butterfly valve offers excellent fugitive emissions resistance in high cycle applications as well as applications where large thermal gradients are encountered. The key to the design and sealing performance is due to the packing follower being integrally molded into the elastomeric backliner.

### • PFA-LINED ONE-PIECE DISC/SHAFT ASSEMBLY

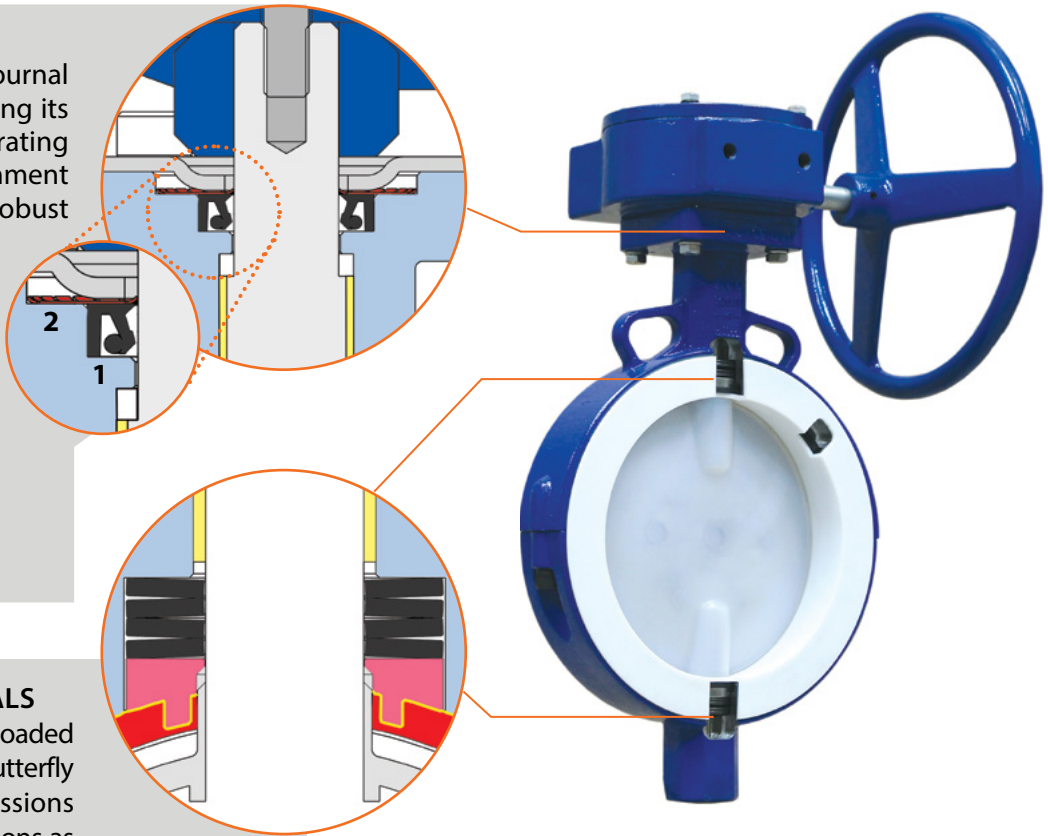
The standard PFA-lined disc/shaft assembly offers low permeation properties and excellent wear resistance in demanding applications. Through a series of locking holes, the PFA lining is securely anchored to the disc/shaft core eliminating liner delamination or collapse even in high vacuum applications.

### • DUST SEAL

An engineered Nitrile atmospheric seal at the shaft prevents the ingress of foreign material into the packing chamber while providing additional shaft sealing. Viton available upon request.

### • LOW PROFILE DISC

The one piece disc/shaft contour was optimized to minimize pressure drops while providing for high flow rates throughout the entire range of disc rotation.

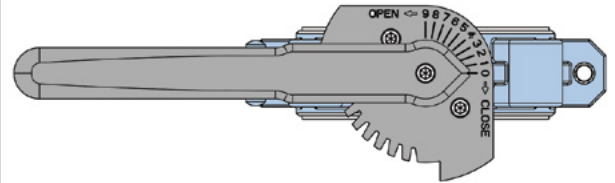


### • POSITIVE OPEN/CLOSED INDICATION

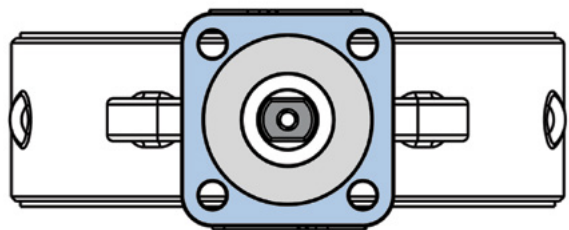
With the shaft double-D flats parallel to the disc plane, the lever operates like a valve position indicator, parallel to the line when open, and perpendicular when closed.

### • ISO 5211 MOUNTING FLANGE

For ease of actuation and standardized mounting hardware, all FluoroSeal® lined butterfly valves have ISO 5211 standard mounting flanges.



Positive Open/Closed Indication

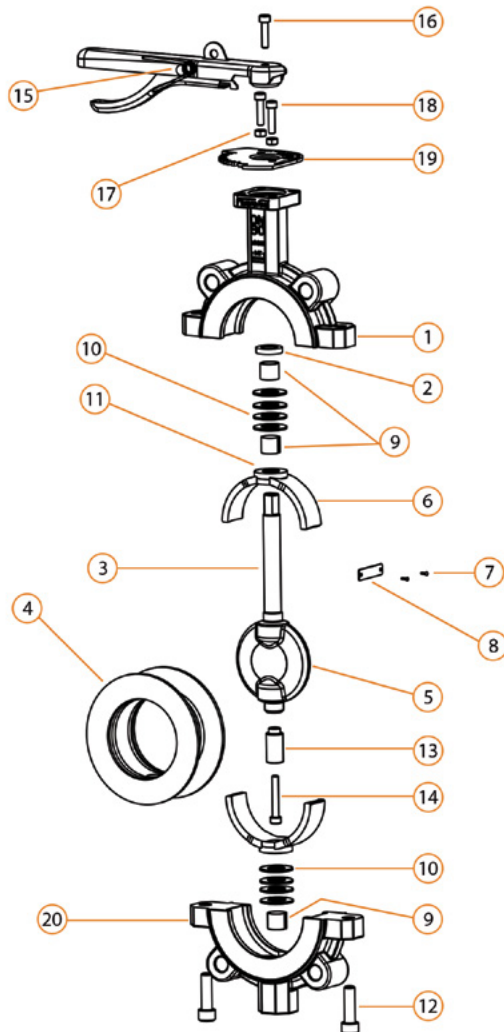


ISO 5211 Mounting Flange

## STANDARD CONFIGURATION

### LINED BUTTERFLY VALVE

Class 150: 2" to 24" / PN6: DN50 to DN600 / PN10: DN50 to DN600



### STANDARD CONFIGURATION

ASTM A216 WCB body, ASTM A995 CD4MCuN (2"-16") or ASTM A516 Gr. 70 (18"-24") disc/shaft core, GF2P body liner, virgin unpigmented PFA disc/shaft liner, silicon back liner, NBR nitril dust seal ring, and ASTM A193 Gr. B7 bolting.

### LIST OF COMPONENTS

| No. | Description/Part      |
|-----|-----------------------|
| 1   | Upper body            |
| 2   | Dust seal ring        |
| 3   | Disc/Shaft            |
| 4   | Body Liner            |
| 5   | Disc Lining           |
| 6   | Backliner             |
| 7   | Name Plate Screws     |
| 8   | Name Plate            |
| 9   | Bearing               |
| 10  | Belleville Washer     |
| 11  | Pusher                |
| 12  | Body bolt             |
| 13  | DN Bottom Shaft       |
| 14  | DN Bottom Shaft Bolt  |
| 15  | Wrench                |
| 16  | Wrench Screw          |
| 17  | Position Plate Nuts   |
| 18  | Position Plate Screws |
| 19  | Position Plate        |
| 20  | Lower body            |

### DESIGN AND TESTING STANDARDS

#### API 609

Specification for Butterfly Valves

#### ANSI B16.10

Face-to-Face and End-to-End Dimensions of Valves

#### ANSI B16.34/ EN 12516-1

Valves Flanged, Threaded, and Welded Ends

#### NACE MR0175/ ISO 15156

Sulphide Stress Cracking Resistant Metallic Material for Oilfield Equipment

#### EN 1092-1

Flanges and joints

#### ANSI B16.5

2" – 24" Pipe Flanges and Flanged Fittings

#### MSS SP-55

Quality Standard for Steel Castings for Valves

ASTM / ANSI / EN  
Materials

API 598  
Testing

ISO 15848  
Fugitive Emissions

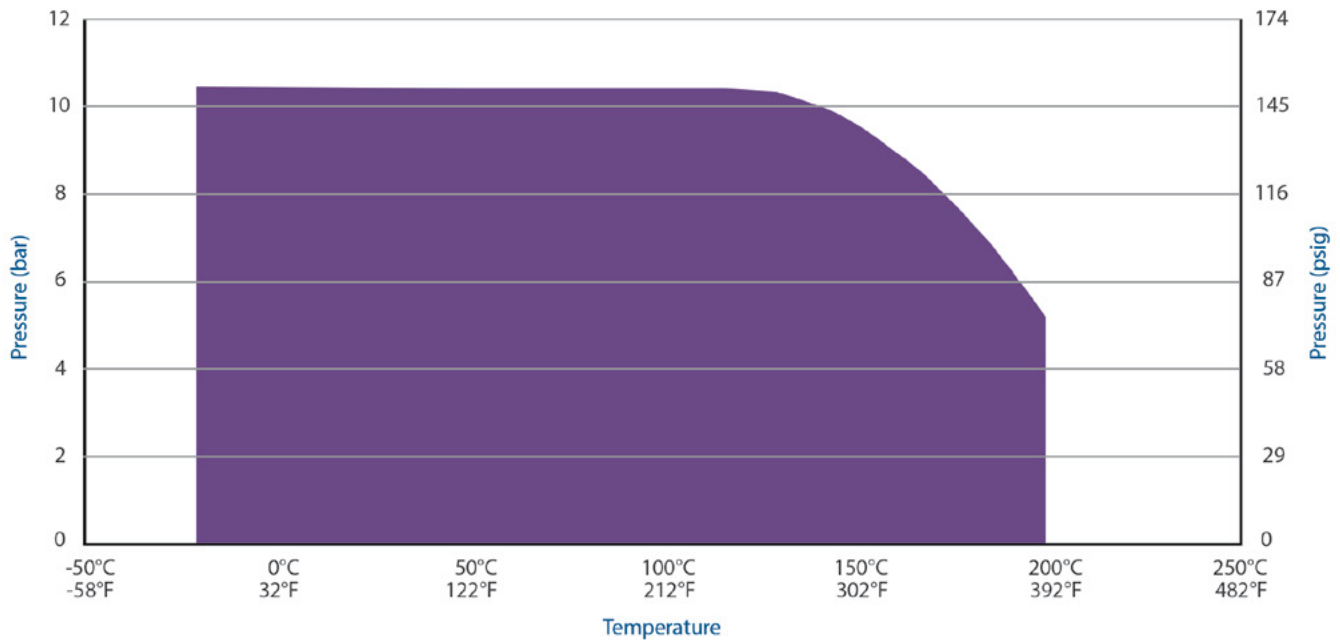
## VALVE OPERATING TORQUES

| Size |     | ISO Mounting Pattern | Operating Torque |      |
|------|-----|----------------------|------------------|------|
| NPS  | DN  |                      | (ft.lb)          | (Nm) |
| 2"   | 50  | F05                  | 15               | 20   |
| 2 ½" | 65  | F05                  | 18               | 25   |
| 3"   | 80  | F05                  | 33               | 45   |
| 4"   | 100 | F07                  | 44               | 60   |
| 5"   | 125 | F07                  | 63               | 85   |
| 6"   | 150 | F07                  | 103              | 140  |
| 8"   | 200 | F10                  | 140              | 190  |
| 10"  | 250 | F10                  | 236              | 320  |
| 12"  | 300 | F10                  | 310              | 420  |
| 14"  | 350 | F12                  | 369              | 500  |
| 16"  | 400 | F12                  | 406              | 550  |
| 18"  | 450 | F14                  | 457              | 620  |
| 20"  | 500 | F14                  | 502              | 680  |
| 24"  | 600 | F14                  | 701              | 950  |

## FLOW COEFFICIENT (Cv)

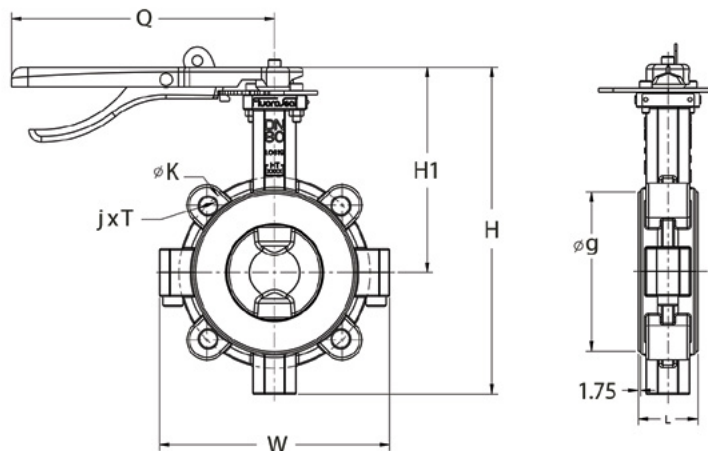
| Size |     | Degrees Open |       |       |       |       |        |        |        |        |
|------|-----|--------------|-------|-------|-------|-------|--------|--------|--------|--------|
| NPS  | DN  | 10°          | 20°   | 30°   | 40°   | 50°   | 60°    | 70°    | 80°    | 90°    |
| 2"   | 50  | 0            | 7     | 21    | 39    | 72    | 105    | 151    | 195    | 222    |
| 2 ½" | 65  | 0            | 12    | 26    | 53    | 91    | 137    | 191    | 248    | 279    |
| 3"   | 80  | 0            | 19    | 37    | 80    | 141   | 224    | 310    | 392    | 458    |
| 4"   | 100 | 0            | 24    | 58    | 108   | 184   | 293    | 444    | 566    | 678    |
| 5"   | 125 | 0            | 42    | 93    | 196   | 293   | 525    | 747    | 943    | 1,175  |
| 6"   | 150 | 0            | 71    | 153   | 269   | 455   | 746    | 1,107  | 1,412  | 1,737  |
| 8"   | 200 | 0            | 108   | 264   | 536   | 925   | 1,367  | 2,108  | 2,793  | 3,536  |
| 10"  | 250 | 0            | 200   | 402   | 826   | 1,341 | 1,865  | 2,804  | 4,236  | 5,236  |
| 12"  | 300 | 0            | 304   | 603   | 1,151 | 1,993 | 3,095  | 4,595  | 6,917  | 8,368  |
| 14"  | 350 | 0            | 403   | 768   | 1,366 | 2,084 | 3,339  | 5,280  | 8,326  | 10,160 |
| 16"  | 400 | 0            | 596   | 1,147 | 1,712 | 2,844 | 4,908  | 7,595  | 10,734 | 13,161 |
| 18"  | 450 | 0            | 776   | 1,454 | 2,583 | 4,459 | 7,257  | 10,669 | 14,215 | 17,280 |
| 20"  | 500 | 0            | 1,036 | 1,875 | 3,453 | 6,207 | 9,458  | 13,682 | 18,055 | 20,883 |
| 24"  | 600 | 0            | 1,476 | 2,499 | 4,847 | 8,603 | 13,161 | 19,080 | 24,595 | 28,426 |

## OPERATING PRESSURE-TEMPERATURE CHART LINED BUTTERFLY VALVES



### NOTES:

1. The information in this catalog is provided for general informational purposes only.
2. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.



## LINED BUTTERFLY VALVE - LUG Class 150/PN 6/PN 10/PN 16

SIZE 2" to 8"  
(DN50-DN200)

Wrench Operated

Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609,

ANSI B16.10, and EN 558-1

Flanged End Dimensions to ANSI B16.5 and

EN 1092-1

### ANSI CLASS 150

| Size   |     | L   |    | W    |     | H    |     | H1  |     | K    |       | g    |     | T          | j            |  | Q    |     | Weight |      |
|--------|-----|-----|----|------|-----|------|-----|-----|-----|------|-------|------|-----|------------|--------------|--|------|-----|--------|------|
| in     | mm  | in  | mm | in   | mm  | in   | mm  | in  | mm  | in   | mm    | in   | mm  |            | No. of holes |  | in   | mm  | lb     | Kg   |
| 2"     | 50  | 1.7 | 44 | 6.6  | 168 | 7.9  | 200 | 5.8 | 147 | 4.8  | 120.7 | 3.5  | 90  | 5/8-11 UNC | 4            |  | 8.3  | 210 | 9.8    | 4.4  |
| 2 1/2" | 65  | 1.9 | 47 | 6.8  | 172 | 9.7  | 246 | 6.2 | 157 | 5.5  | 139.7 | 4.3  | 110 | 5/8-11 UNC | 4            |  | 8.3  | 210 | 12.2   | 5.5  |
| 3"     | 80  | 1.9 | 47 | 7.2  | 184 | 10.3 | 261 | 6.5 | 164 | 6.0  | 152.4 | 5.0  | 126 | 5/8-11 UNC | 4            |  | 8.3  | 210 | 13.1   | 5.9  |
| 4"     | 100 | 2.1 | 53 | 10.0 | 254 | 12.0 | 306 | 7.5 | 190 | 7.5  | 190.5 | 5.7  | 146 | 3/4-10 UNC | 8            |  | 14.2 | 360 | 24.3   | 11.0 |
| 5"     | 125 | 2.2 | 57 | 11.0 | 280 | 13.0 | 331 | 8.0 | 202 | 8.5  | 215.9 | 6.9  | 176 | 3/4-10 UNC | 8            |  | 14.2 | 360 | 29.8   | 13.5 |
| 6"     | 150 | 2.2 | 57 | 12.5 | 318 | 14.2 | 360 | 8.6 | 218 | 9.5  | 241.3 | 7.9  | 201 | 3/4-10 UNC | 8            |  | 22.6 | 575 | 38.3   | 17.4 |
| 8"     | 200 | 2.4 | 61 | 15.6 | 396 | 17.0 | 432 | 9.9 | 252 | 11.8 | 298.5 | 10.1 | 256 | 3/4-10 UNC | 8            |  | 22.6 | 575 | 52.0   | 23.6 |

### PN 6

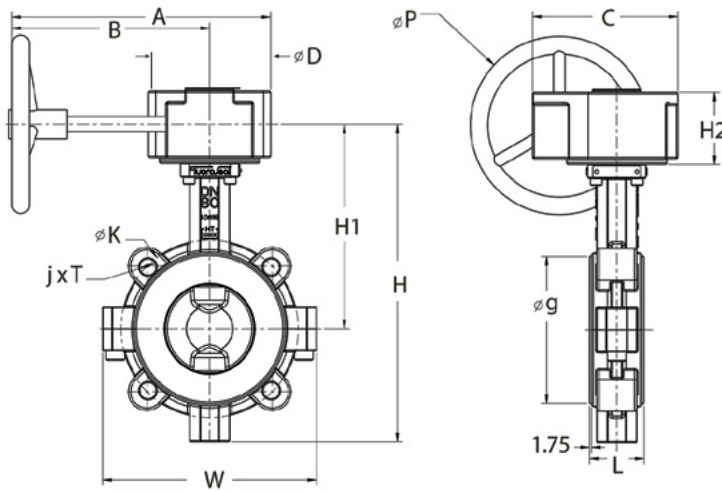
| Size   |     | L   |    | W    |     | H    |     | H1  |     | K    |     | g    |     | T        | j            |  | Q    |     | Weight |      |
|--------|-----|-----|----|------|-----|------|-----|-----|-----|------|-----|------|-----|----------|--------------|--|------|-----|--------|------|
| in     | DN  | in  | mm | in   | mm  | in   | mm  | in  | mm  | in   | mm  | in   | mm  |          | No. of holes |  | in   | mm  | lb     | Kg   |
| 2"     | 50  | 1.7 | 44 | 6.6  | 168 | 7.9  | 200 | 5.8 | 147 | 4.3  | 110 | 3.5  | 90  | M12X1.75 | 4            |  | 8.3  | 210 | 9.8    | 4.4  |
| 2 1/2" | 65  | 1.9 | 47 | 6.8  | 172 | 9.7  | 246 | 6.2 | 157 | 5.1  | 130 | 4.3  | 110 | M12X1.75 | 4            |  | 8.3  | 210 | 12.2   | 5.5  |
| 3"     | 80  | 1.9 | 47 | 7.2  | 184 | 10.3 | 261 | 6.5 | 164 | 5.9  | 150 | 5.0  | 126 | M16X2    | 4            |  | 8.3  | 210 | 13.1   | 5.9  |
| 4"     | 100 | 2.1 | 53 | 10.0 | 254 | 12.0 | 306 | 7.5 | 190 | 6.7  | 170 | 5.7  | 146 | M16X2    | 8            |  | 14.2 | 360 | 24.3   | 11.0 |
| 5"     | 125 | 2.2 | 57 | 11.0 | 280 | 13.0 | 331 | 8.0 | 202 | 7.9  | 200 | 6.9  | 176 | M16X2    | 8            |  | 14.2 | 360 | 29.8   | 13.5 |
| 6"     | 150 | 2.2 | 57 | 12.5 | 318 | 14.2 | 360 | 8.6 | 218 | 8.9  | 225 | 7.9  | 201 | M16X2    | 8            |  | 22.6 | 575 | 38.3   | 17.4 |
| 8"     | 200 | 2.4 | 61 | 15.6 | 396 | 17.0 | 432 | 9.9 | 252 | 11.0 | 280 | 10.1 | 256 | M20X2.5  | 8            |  | 22.6 | 575 | 52.0   | 23.6 |

### PN 10

| Size   |     | L   |    | W    |     | H    |     | H1  |     | K    |     | g    |     | T       | j            |  | Q    |     | Weight |      |
|--------|-----|-----|----|------|-----|------|-----|-----|-----|------|-----|------|-----|---------|--------------|--|------|-----|--------|------|
| in     | DN  | in  | mm | in   | mm  | in   | mm  | in  | mm  | in   | mm  | in   | mm  |         | No. of holes |  | in   | mm  | lb     | Kg   |
| 2"     | 50  | 1.7 | 44 | 6.6  | 168 | 7.9  | 200 | 5.8 | 147 | 4.9  | 125 | 3.5  | 90  | M16X2   | 4            |  | 8.3  | 210 | 9.8    | 4.4  |
| 2 1/2" | 65  | 1.9 | 47 | 6.8  | 172 | 9.7  | 246 | 6.2 | 157 | 5.7  | 145 | 4.3  | 110 | M16X2   | 8            |  | 8.3  | 210 | 12.2   | 5.5  |
| 3"     | 80  | 1.9 | 47 | 7.2  | 184 | 10.3 | 261 | 6.5 | 164 | 6.3  | 160 | 5.0  | 126 | M16X2   | 8            |  | 8.3  | 210 | 13.1   | 5.9  |
| 4"     | 100 | 2.1 | 53 | 10.0 | 254 | 12.0 | 306 | 7.5 | 190 | 7.1  | 180 | 5.7  | 146 | M16X2   | 8            |  | 14.2 | 360 | 24.3   | 11.0 |
| 5"     | 125 | 2.2 | 57 | 11.0 | 280 | 13.0 | 331 | 8.0 | 202 | 8.3  | 210 | 6.9  | 176 | M16X2   | 8            |  | 14.2 | 360 | 29.8   | 13.5 |
| 6"     | 150 | 2.2 | 57 | 12.5 | 318 | 14.2 | 360 | 8.6 | 218 | 9.4  | 240 | 7.9  | 201 | M16X2   | 8            |  | 22.6 | 575 | 38.3   | 17.4 |
| 8"     | 200 | 2.4 | 61 | 15.6 | 396 | 17.0 | 432 | 9.9 | 252 | 11.6 | 295 | 10.1 | 256 | M20X2.5 | 8            |  | 22.6 | 575 | 52.0   | 23.6 |

### PN 16

| Size   |     | L   |    | W    |     | H    |     | H1  |     | K    |     | g    |     | T       | j            |  | Q    |     | Weight |      |
|--------|-----|-----|----|------|-----|------|-----|-----|-----|------|-----|------|-----|---------|--------------|--|------|-----|--------|------|
| in     | DN  | in  | mm | in   | mm  | in   | mm  | in  | mm  | in   | mm  | in   | mm  |         | No. of holes |  | in   | mm  | lb     | Kg   |
| 2"     | 50  | 1.7 | 44 | 6.6  | 168 | 7.9  | 200 | 5.8 | 147 | 4.9  | 125 | 3.5  | 90  | M16X2   | 4            |  | 8.3  | 210 | 9.8    | 4.4  |
| 2 1/2" | 65  | 1.9 | 47 | 6.8  | 172 | 9.7  | 246 | 6.2 | 157 | 5.7  | 145 | 4.3  | 110 | M16X2   | 8            |  | 8.3  | 210 | 12.2   | 5.5  |
| 3"     | 80  | 1.9 | 47 | 7.2  | 184 | 10.3 | 261 | 6.5 | 164 | 6.3  | 160 | 5.0  | 126 | M16X2   | 8            |  | 8.3  | 210 | 13.1   | 5.9  |
| 4"     | 100 | 2.1 | 53 | 10.0 | 254 | 12.0 | 306 | 7.5 | 190 | 7.1  | 180 | 5.7  | 146 | M16X2   | 8            |  | 14.2 | 360 | 24.3   | 11.0 |
| 5"     | 125 | 2.2 | 57 | 11.0 | 280 | 13.0 | 331 | 8.0 | 202 | 8.3  | 210 | 6.9  | 176 | M16X2   | 8            |  | 14.2 | 360 | 29.8   | 13.5 |
| 6"     | 150 | 2.2 | 57 | 12.5 | 318 | 14.2 | 360 | 8.6 | 218 | 9.4  | 240 | 7.9  | 201 | M16X2   | 8            |  | 22.6 | 575 | 38.3   | 17.4 |
| 8"     | 200 | 2.4 | 61 | 15.6 | 396 | 17.0 | 432 | 9.9 | 252 | 11.6 | 295 | 10.1 | 256 | M20X2.5 | 12           |  | 22.6 | 575 | 52.0   | 23.6 |



**LINED BUTTERFLY VALVE - LUG**  
**Class 150/PN 6/PN 10/ PN 16**

SIZE 8" to 24"  
(DN200-DN600)

Enclosed Gear Operated

Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609,  
ANSI B16.10, and EN 558-1

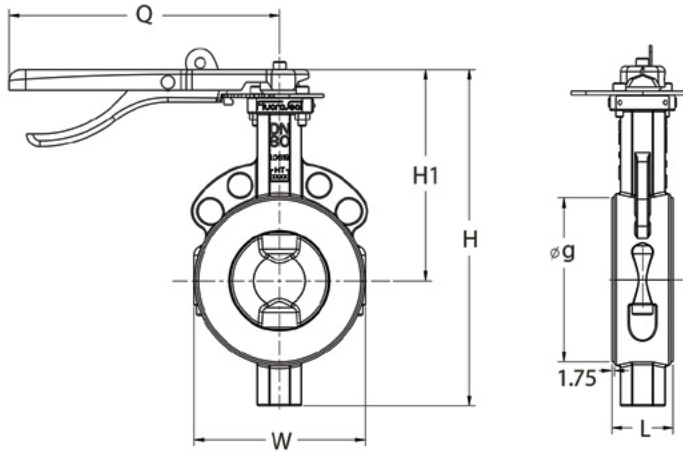
Flanged End Dimensions to ANSI B16.5 and  
EN 1092-1

| ANSI CLASS 150 |     |     |     |      |     |      |      |      |     |     |     |      |       |      |     |            |       |      |     |      |     |      |     |      |     |      |     |        |       |
|----------------|-----|-----|-----|------|-----|------|------|------|-----|-----|-----|------|-------|------|-----|------------|-------|------|-----|------|-----|------|-----|------|-----|------|-----|--------|-------|
| Size           |     | L   |     | W    |     | H    |      | H1   |     | H2  |     | K    |       | g    |     | T          | j     | A    |     | B    |     | C    |     | D    |     | P    |     | Weight |       |
| in             | mm  | in  | mm  | in   | mm  | in   | mm   | in   | mm  | in  | mm  | in   | mm    | in   | mm  |            | Holes | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in   | mm  | lb     | Kg    |
| 8"             | 200 | 2.4 | 61  | 15.6 | 396 | 17.5 | 445  | 10.4 | 265 | 3.1 | 78  | 11.8 | 298.5 | 10.1 | 256 | 3/4-10 UNC | 8     | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 82.8   | 37.6  |
| 10"            | 250 | 2.7 | 69  | 18.7 | 474 | 19.8 | 504  | 11.6 | 295 | 3.1 | 78  | 14.3 | 362.0 | 12.1 | 307 | 7/8-9 UNC  | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 117.9  | 53.5  |
| 12"            | 300 | 3.1 | 79  | 22.3 | 566 | 22.8 | 579  | 13.2 | 335 | 3.1 | 78  | 17.0 | 431.8 | 14.3 | 363 | 7/8-9 UNC  | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 164.0  | 74.4  |
| 14"            | 350 | 3.1 | 79  | 23.5 | 598 | 26.6 | 675  | 14.9 | 379 | 3.1 | 78  | 18.8 | 476.3 | 16.3 | 413 | 1-8UNC     | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 196.6  | 89.2  |
| 16"            | 400 | 4.1 | 103 | 26.5 | 672 | 29.1 | 738  | 16.4 | 416 | 3.1 | 78  | 21.3 | 539.8 | 18.2 | 463 | 1-8UNC     | 16    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 302.6  | 137.3 |
| 18"            | 450 | 4.5 | 115 | 28.4 | 722 | 32.2 | 818  | 18.0 | 457 | 3.1 | 80  | 22.8 | 577.9 | 20.4 | 518 | 1-1/8-8UNC | 16    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 369.9  | 167.8 |
| 20"            | 500 | 5.0 | 128 | 31.6 | 802 | 34.6 | 879  | 19.4 | 492 | 3.1 | 80  | 25.0 | 635.0 | 22.4 | 568 | 1-1/8-8UNC | 20    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 501.4  | 227.4 |
| 24"            | 600 | 6.1 | 155 | 36.6 | 930 | 40.3 | 1024 | 23.2 | 591 | 4.5 | 114 | 29.5 | 749.3 | 26.3 | 669 | 1 1/4-8UNC | 20    | 16.5 | 418 | 11.3 | 288 | 11.4 | 290 | 10.2 | 260 | 15.0 | 380 | 859.9  | 390.0 |

| PN 6 |     |     |     |      |     |      |       |      |     |     |     |      |     |      |     |         |       |      |     |      |     |      |     |      |     |      |     |        |       |
|------|-----|-----|-----|------|-----|------|-------|------|-----|-----|-----|------|-----|------|-----|---------|-------|------|-----|------|-----|------|-----|------|-----|------|-----|--------|-------|
| Size |     | L   |     | W    |     | H    |       | H1   |     | H2  |     | K    |     | g    |     | T       | j     | A    |     | B    |     | C    |     | D    |     | P    |     | Weight |       |
| in   | DN  | in  | mm  | in   | mm  | in   | mm    | in   | mm  | in  | mm  | in   | mm  | in   | mm  |         | Holes | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in   | mm  | lb     | Kg    |
| 8"   | 200 | 2.4 | 61  | 15.6 | 396 | 17.5 | 445   | 10.4 | 265 | 3.1 | 78  | 11.0 | 280 | 10.1 | 256 | M20X2.5 | 8     | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 82.8   | 37.6  |
| 10"  | 250 | 2.7 | 69  | 18.7 | 474 | 19.8 | 504   | 11.6 | 295 | 3.1 | 78  | 13.2 | 335 | 12.1 | 307 | M16X2   | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 117.9  | 53.5  |
| 12"  | 300 | 3.1 | 79  | 22.3 | 566 | 22.8 | 579   | 13.2 | 335 | 3.1 | 78  | 15.6 | 395 | 14.3 | 363 | M20X2.5 | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 164.0  | 74.4  |
| 14"  | 350 | 3.1 | 79  | 23.5 | 598 | 26.6 | 675   | 14.9 | 379 | 3.1 | 78  | 17.5 | 445 | 16.3 | 413 | M20X2.5 | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 196.6  | 89.2  |
| 16"  | 400 | 4.1 | 103 | 26.5 | 672 | 29.1 | 738   | 16.4 | 416 | 3.1 | 78  | 19.5 | 495 | 18.2 | 463 | M20X2.5 | 16    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 302.6  | 137.3 |
| 18"  | 450 | 4.5 | 115 | 28.4 | 722 | 32.2 | 818   | 18.0 | 457 | 3.1 | 80  | 21.7 | 550 | 20.4 | 518 | M20X2.5 | 16    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 369.9  | 167.8 |
| 20"  | 500 | 5.0 | 128 | 31.6 | 802 | 34.6 | 879   | 19.4 | 492 | 3.1 | 80  | 23.6 | 600 | 22.4 | 568 | M20X2.5 | 20    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 501.4  | 227.4 |
| 24"  | 600 | 6.1 | 155 | 36.6 | 930 | 40.3 | 1,024 | 23.2 | 591 | 4.5 | 114 | 27.8 | 705 | 26.3 | 669 | M24X3   | 20    | 16.5 | 418 | 11.3 | 288 | 11.4 | 290 | 10.2 | 260 | 15.0 | 380 | 859.9  | 390.0 |

| PN 10 |     |     |     |      |     |      |       |      |     |     |     |      |     |      |     |         |       |      |     |      |     |      |     |      |     |      |     |        |       |
|-------|-----|-----|-----|------|-----|------|-------|------|-----|-----|-----|------|-----|------|-----|---------|-------|------|-----|------|-----|------|-----|------|-----|------|-----|--------|-------|
| Size  |     | L   |     | W    |     | H    |       | H1   |     | H2  |     | K    |     | g    |     | T       | j     | A    |     | B    |     | C    |     | D    |     | P    |     | Weight |       |
| in    | DN  | in  | mm  | in   | mm  | in   | mm    | in   | mm  | in  | mm  | in   | mm  | in   | mm  |         | Holes | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in   | mm  | lb     | Kg    |
| 8"    | 200 | 2.4 | 61  | 15.6 | 396 | 17.5 | 445   | 10.4 | 265 | 3.1 | 78  | 11.6 | 295 | 10.1 | 256 | M20X2.5 | 8     | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 82.8   | 37.6  |
| 10"   | 250 | 2.7 | 69  | 18.7 | 474 | 19.8 | 504   | 11.6 | 295 | 3.1 | 78  | 13.8 | 350 | 12.1 | 307 | M20X2.5 | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 117.9  | 53.5  |
| 12"   | 300 | 3.1 | 79  | 22.3 | 566 | 22.8 | 579   | 13.2 | 335 | 3.1 | 78  | 15.7 | 400 | 14.3 | 363 | M20X2.5 | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 164.0  | 74.4  |
| 14"   | 350 | 3.1 | 79  | 23.5 | 598 | 26.6 | 675   | 14.9 | 379 | 3.1 | 78  | 18.1 | 460 | 16.3 | 413 | M20X2.5 | 16    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 196.6  | 89.2  |
| 16"   | 400 | 4.1 | 103 | 26.5 | 672 | 29.1 | 738   | 16.4 | 416 | 3.1 | 78  | 20.3 | 515 | 18.2 | 463 | M24X3   | 16    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 302.6  | 137.3 |
| 18"   | 450 | 4.5 | 115 | 28.8 | 732 | 32.2 | 818   | 18.0 | 457 | 3.1 | 80  | 22.2 | 565 | 20.4 | 518 | M24X3   | 20    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 369.9  | 167.8 |
| 20"   | 500 | 5.0 | 128 | 31.6 | 802 | 34.6 | 879   | 19.4 | 492 | 3.1 | 80  | 24.4 | 620 | 22.4 | 568 | M24X3   | 20    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 501.4  | 227.4 |
| 24"   | 600 | 6.1 | 155 | 36.6 | 930 | 40.3 | 1,024 | 23.2 | 591 | 4.5 | 114 | 28.5 | 725 | 26.3 | 669 | M27X3   | 20    | 16.5 | 418 | 11.3 | 288 | 11.4 | 290 | 10.2 | 260 | 15.0 | 380 | 859.9  | 390.0 |

| PN 16 |     |     |     |      |     |      |       |      |     |     |     |      |     |      |     |         |       |      |     |      |     |      |     |      |     |      |     |        |       |
|-------|-----|-----|-----|------|-----|------|-------|------|-----|-----|-----|------|-----|------|-----|---------|-------|------|-----|------|-----|------|-----|------|-----|------|-----|--------|-------|
| Size  |     | L   |     | W    |     | H    |       | H1   |     | H2  |     | K    |     | g    |     | T       | j     | A    |     | B    |     | C    |     | D    |     | P    |     | Weight |       |
| in    | DN  | in  | mm  | in   | mm  | in   | mm    | in   | mm  | in  | mm  | in   | mm  | in   | mm  |         | Holes | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in   | mm  | lb     | Kg    |
| 8"    | 200 | 2.4 | 61  | 15.6 | 396 | 17.5 | 445   | 10.4 | 265 | 3.1 | 78  | 11.6 | 295 | 10.1 | 256 | M20X2.5 | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 82.8   | 37.6  |
| 10"   | 250 | 2.7 | 69  | 18.7 | 474 | 19.8 | 504   | 11.6 | 295 | 3.1 | 78  | 13.8 | 355 | 12.1 | 307 | M24X3   | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 117.9  | 53.5  |
| 12"   | 300 | 3.1 | 79  | 22.3 | 566 | 22.8 | 579   | 13.2 | 335 | 3.1 | 78  | 15.7 | 410 | 14.3 | 363 | M24X3   | 12    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 164.0  | 74.4  |
| 14"   | 350 | 3.1 | 79  | 23.5 | 598 | 26.6 | 675   | 14.9 | 379 | 3.1 | 78  | 18.5 | 470 | 16.3 | 413 | M24X3   | 16    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 196.6  | 89.2  |
| 16"   | 400 | 4.1 | 103 | 26.5 | 672 | 29.1 | 738   | 16.4 | 416 | 3.1 | 78  | 20.7 | 525 | 18.2 | 463 | M27X3   | 16    | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 11.8 | 300 | 302.6  | 137.3 |
| 18"   | 450 | 4.5 | 115 | 28.8 | 732 | 32.2 | 818   | 18.0 | 457 | 3.1 | 80  | 23.0 | 585 | 20.4 | 518 | M27X3   | 20    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 396.9  | 167.8 |
| 20"   | 500 | 5.0 | 128 | 31.6 | 802 | 34.6 | 879   | 19.4 | 492 | 3.1 | 80  | 25.6 | 650 | 22.4 | 568 | M30X3   | 20    | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 11.8 | 300 | 501.4  | 227.4 |
| 24"   | 600 | 6.1 | 155 | 36.6 | 930 | 40.3 | 1,024 | 23.2 | 591 | 4.5 | 114 | 30.3 | 770 | 26.3 | 669 | M30X3   | 20    | 16.5 | 418 | 11.3 | 288 | 11.4 | 290 | 10.2 | 260 | 15.0 | 380 | 859.9  | 390.0 |



## LINED BUTTERFLY VALVE - WAFER Class 150/PN 6/PN 10/ PN 16

SIZE 2" to 4"  
(DN50-DN100)

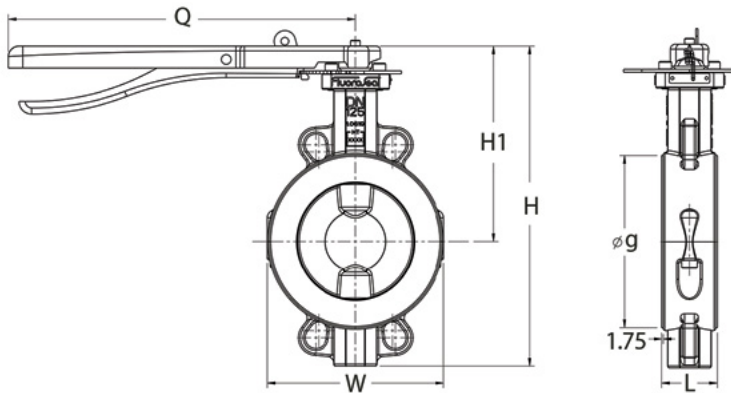
Wrench Operated

Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609,  
ANSI B16.10, and EN 558-1

Flanged End Dimensions to ANSI B16.5 and  
EN 1092-1

| ANSI CLASS 150/ PN 6/ PN 10/ PN 16 |     |     |    |     |     |      |     |     |     |     |     |      |     |        |     |
|------------------------------------|-----|-----|----|-----|-----|------|-----|-----|-----|-----|-----|------|-----|--------|-----|
| Size                               |     | L   |    | W   |     | H    |     | H1  |     | g   |     | Q    |     | Weight |     |
| in                                 | DN  | in  | mm | in  | mm  | in   | mm  | in  | mm  | in  | mm  | in   | mm  | lb     | Kg  |
| 2"                                 | 50  | 1.7 | 44 | 3.8 | 96  | 7.9  | 200 | 5.8 | 147 | 3.5 | 90  | 8.3  | 210 | 6.4    | 2.9 |
| 2 1/2"                             | 65  | 1.9 | 47 | 4.6 | 116 | 9.7  | 246 | 6.2 | 157 | 4.3 | 110 | 8.3  | 210 | 8.9    | 4.0 |
| 3"                                 | 80  | 1.9 | 47 | 5.2 | 133 | 10.3 | 261 | 6.5 | 164 | 5.0 | 126 | 8.3  | 210 | 10.2   | 4.6 |
| 4"                                 | 100 | 2.1 | 53 | 6.1 | 156 | 12.0 | 306 | 7.5 | 190 | 5.7 | 146 | 14.2 | 360 | 16.0   | 7.3 |



## LINED BUTTERFLY VALVE - WAFER Class 150/PN 6/PN 10/ PN 16

SIZE 5" to 8"  
(DN125-DN200)

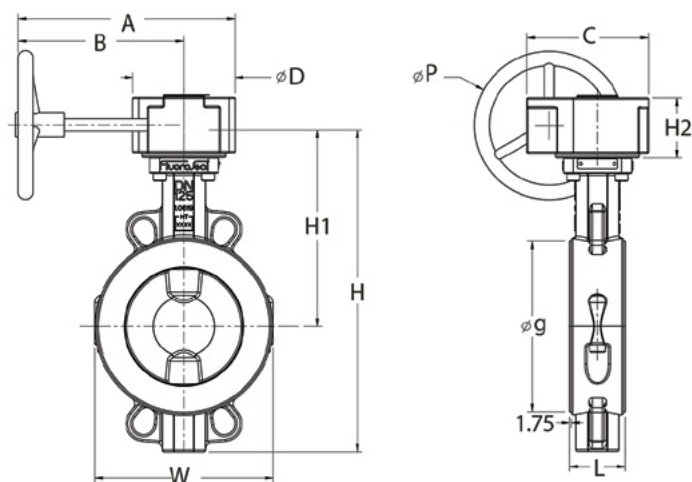
Wrench Operated

Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609,  
ANSI B16.10, and EN 558-1

Flanged End Dimensions to ANSI B16.5 and  
EN 1092-1

| ANSI CLASS 150/ PN 6/ PN 10/ PN 16 |     |     |    |      |     |      |     |     |     |      |     |      |     |        |      |
|------------------------------------|-----|-----|----|------|-----|------|-----|-----|-----|------|-----|------|-----|--------|------|
| Size                               |     | L   |    | W    |     | H    |     | H1  |     | g    |     | Q    |     | Weight |      |
| in                                 | DN  | in  | mm | in   | mm  | in   | mm  | in  | mm  | in   | mm  | in   | mm  | lb     | Kg   |
| 5"                                 | 125 | 2.2 | 57 | 7.2  | 183 | 13.0 | 331 | 8.0 | 202 | 6.9  | 176 | 14.2 | 360 | 21.3   | 9.7  |
| 6"                                 | 150 | 2.2 | 57 | 8.3  | 211 | 14.2 | 360 | 8.6 | 218 | 7.9  | 201 | 22.6 | 575 | 26.8   | 12.2 |
| 8"                                 | 200 | 2.4 | 61 | 10.7 | 271 | 17.0 | 432 | 9.9 | 252 | 10.1 | 256 | 22.6 | 575 | 36.6   | 16.6 |



### LINED BUTTERFLY VALVE - WAFER Class 150/PN 6/PN 10/ PN 16

SIZE 8" to 24"  
(DN200-DN600)

Enclosed Gear Operated

Actuators Optional on All Sizes

Face-to-Face Dimensions to API 609,

ANSI B16.10, and EN 558-1

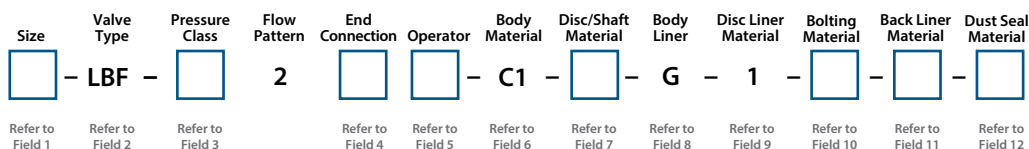
Flanged End Dimensions to ANSI B16.5 and  
EN 1092-1

| ANSI CLASS 150/ PN 6/ PN 10/ PN 16 |     |     |     |      |     |      |       |      |     |      |     |      |     |      |     |      |     |      |     |     |     |      |     |        |       |
|------------------------------------|-----|-----|-----|------|-----|------|-------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-----|-----|------|-----|--------|-------|
| Size                               |     | L   |     | W    |     | H    |       | H1   |     | g    |     | A    |     | B    |     | C    |     | D    |     | H2  |     | P    |     | Weight |       |
| in                                 | DN  | in  | mm  | in   | mm  | in   | mm    | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in   | mm  | in  | mm  | in   | mm  | lb     | Kg    |
| 8"                                 | 200 | 2.4 | 61  | 10.7 | 271 | 17.5 | 445   | 10.4 | 265 | 10.1 | 256 | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 3.1 | 78  | 11.8 | 300 | 67.5   | 30.6  |
| 10"                                | 250 | 2.7 | 69  | 12.8 | 324 | 19.8 | 504   | 11.6 | 295 | 12.1 | 307 | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 3.1 | 78  | 11.8 | 300 | 86.8   | 39.4  |
| 12"                                | 300 | 3.1 | 79  | 15.0 | 382 | 22.8 | 579   | 13.2 | 335 | 14.3 | 363 | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 3.1 | 78  | 11.8 | 300 | 117.1  | 53.1  |
| 14"                                | 350 | 3.1 | 79  | 19.3 | 491 | 26.6 | 675   | 14.9 | 379 | 16.3 | 413 | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 3.1 | 78  | 11.8 | 300 | 159.8  | 72.5  |
| 16"                                | 400 | 4.1 | 103 | 21.8 | 553 | 29.1 | 738   | 16.4 | 416 | 18.2 | 463 | 12.2 | 310 | 9.3  | 235 | 6.9  | 174 | 6.0  | 152 | 3.1 | 78  | 11.8 | 300 | 219.6  | 99.6  |
| 18"                                | 450 | 4.5 | 115 | 23.9 | 608 | 32.2 | 818   | 18.0 | 457 | 20.4 | 518 | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 3.1 | 80  | 11.8 | 300 | 293.4  | 133.1 |
| 20"                                | 500 | 5.0 | 128 | 25.9 | 658 | 34.6 | 879   | 19.4 | 492 | 22.4 | 568 | 12.2 | 311 | 8.9  | 226 | 7.7  | 195 | 6.7  | 170 | 3.1 | 80  | 11.8 | 300 | 354.9  | 161.0 |
| 24"                                | 600 | 6.1 | 155 | 30.4 | 771 | 40.3 | 1,029 | 23.2 | 591 | 26.3 | 669 | 16.5 | 418 | 11.3 | 288 | 11.4 | 290 | 10.2 | 260 | 4.5 | 114 | 15.0 | 380 | 615.2  | 279.1 |

#### NOTES:

1. The information in this catalog is provided for general informational purposes only.
2. Customization for specific applications is available upon request.
3. For all technical parameters of the product please contact your local FluoroSeal sales office or authorized representative.
4. We reserve the right to make changes without prior notice.

# ORDERING INSTRUCTIONS



## Field 1 - Size

### Size Range

2" to 24" or DN50 to DN600

## Field 2 - Valve Type

### Code Type

LBF Lined Butterfly Valve

## Field 3 - Pressure Class

|      |     |      |      |
|------|-----|------|------|
| Code | 15  | DN10 | DN16 |
| Type | 150 | PN10 | PN16 |

## Field 4 - End Connection

|      |                     |       |
|------|---------------------|-------|
| Code | LF                  | WF    |
| Type | Lug (Single Flange) | Wafer |

## Field 5 - Operator

|      |           |                                    |               |                                |
|------|-----------|------------------------------------|---------------|--------------------------------|
| Code | B         | WL                                 | EG            | EL                             |
| Type | Bare Stem | Wrench + Locking Device (Standard) | Enclosed Gear | Enclosed Gear + Locking Device |

## Field 6 - Body Material

|      |                   |
|------|-------------------|
| Code | C1                |
| Type | ASTM A216 Gr. WCB |

## Field 7 - Disc/Shaft Material

|      |                                |                             |
|------|--------------------------------|-----------------------------|
| Code | S8                             | C1                          |
| Type | ASTM A995 Gr. CD4MCuN (2"-12") | ASTM A216 Gr. WCB (14"-24") |

## Field 8 - Body Liner Material

|      |      |
|------|------|
| Code | G    |
| Type | GF2P |

## Field 9 - Disc Liner Material

|      |                |
|------|----------------|
| Code | 1              |
| Type | PFA (Standard) |

## Field 10 - Bolting Material

|      |                  |                   |         |
|------|------------------|-------------------|---------|
| Code | 1                | 2                 | X       |
| Type | ASTM A193 Gr. B7 | ASTM A193 Gr. B7M | Special |

## Field 11 - Back Liner Material

|      |                    |       |
|------|--------------------|-------|
| Code | S                  | V     |
| Type | Silicon (Standard) | Viton |

## Field 12 - Dust Seal Material

|      |                       |       |
|------|-----------------------|-------|
| Code | N                     | V     |
| Type | NBR Nitril (Standard) | Viton |

## MODEL SELECTION EXAMPLE

Example: 6"LBF-152WF/WL-C1-S8-G-1-1-S-N

Description: FluoroSeal 6" API 609 Lined Butterfly Valve, Class 150, 2-Way Flow Pattern, Wafer Type, Wrench with locking device, Body in ASTM A216 Gr. WCB, Disc and Shaft in ASTM A995 Gr. CD4MCuN, Body Liner in GF2P, Disc Liner in PFA, Bolt in ASTM A193 Gr. B7, Back Liner in Silicon, and Dust Seal Ring in NBR Nitril.

## NOTES:

1. For all technical parameters of the product please refer to this catalog, additional information can be obtained from your local FluoroSeal sales office or authorized representative.
2. Customization for specific applications is available upon request.
3. For different materials, not listed in the above tables, please specify.
4. Special material configurations upon request with (X) shown in the model number.

## SCOPE/APPLICABILITY

These terms and conditions shall govern any purchase order or sale of FluoroSeal Inc.'s ("FluoroSeal") product(s) (the "**Product**" – plural "**Products**"). No waiver, alteration or modification of these terms and conditions whether on client's (the "**Client**") purchase order or otherwise, shall be valid unless the waiver, alteration or modification is specifically accepted in writing and signed by an authorized representative of FluoroSeal.

Any placement of an order by the Client constitutes full acceptance of these Terms and Condition. Any additional, different, or conflicting terms proposed, referenced, or issued by the Client — whether contained in purchase orders or other documents — are expressly rejected and shall have no effect unless expressly accepted in writing and signed by an authorized representative of FluoroSeal.

## DELIVERY

FluoroSeal shall make every effort to complete delivery of Products as indicated on its acceptance of an order, but FluoroSeal assumes no responsibility or liability, and shall accept no back charge, for loss or damage due to delay or inability to deliver caused by acts of God, war, labor difficulties, accident, delays of carriers, by contractors or suppliers, inability to obtain materials, shortages of fuel and energy, or any other causes of any kind whatever beyond the control of FluoroSeal (the "**Force Majeure**"). If FluoroSeal's delivery or performance is prevented by Force Majeure, FluoroSeal shall be released from its obligations, and the Client shall be refunded any advance payments made. All further claims by the Client whether direct or indirect, arising from Force Majeure, delays or failure to give notice of delay, including reimbursement of expenses or damages, are expressly excluded.

## WARRANTY

FluoroSeal warrants for one year from the date of shipment its manufactured Products to the extent that FluoroSeal will replace those having defects in material or workmanship when used for the purpose and in the manner which FluoroSeal recommends. If FluoroSeal's examination discloses to its satisfaction that the Products are defective and an adjustment is required, the amount of such adjustment shall not exceed the net sale price of the defective Product(s) - no allowance will be made for labor or expense for 3rd party repair or replacement of defective Products or damage resulting from same. FluoroSeal warrants other manufacturers products which it sells to the extent of the warranties and terms & conditions of their respective makers. Where engineering design or fabrication work is supplied, Client's acceptance of FluoroSeal's design or of delivery of work shall relieve FluoroSeal of all further obligation, other than expressed in FluoroSeal's Product warranty.

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FluoroSeal neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of its engineering designs or Products. This warranty shall not apply to any Products or parts of Products which (a) have been repaired or altered outside of FluoroSeal's factory, in any manner; (b) have been subjected to misuse, negligence or accidents; (c) have been used in a manner contrary to FluoroSeal's instructions or recommendations. FluoroSeal shall not be responsible for design errors due to inaccurate or incomplete information supplied by Client or its representatives.

## LIABILITY

FluoroSeal shall not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether based upon warranty (except for the obligation accepted by FluoroSeal under "Warranty" above), contract or negligence, arising in connection with the design, manufacture, sale, use or repair of the Products or of the engineering designs supplied to Client, or for any claims arising as a result of or in connection with its use of the Product other than in accordance with any specification or instruction provided by FluoroSeal to the Client in relation to the Products. Any litigation shall be interpreted in accordance with the laws of the Province of Quebec, Canada and any suit, action or proceeding relating to these terms and conditions may be instituted in any competent court sitting in the district of Montreal, Quebec, Canada.

## SHIPMENTS

All Products sent out will be carefully examined, counted and packed. The cost of any special packing or special handling caused by Client's

requirements or requests shall be added to the amount of the order. No claim for shortages will be allowed unless made in writing within ten (10) days of receipt of a shipment. Claims for Products damaged or lost in transit should be made to the carrier, as FluoroSeal's responsibility ceases, and title passes, on delivery to the carrier.

## SPECIAL PRODUCTS

Orders covering special or non-standard Products are strictly non-cancelable and non-refundable.

## PRICES

Prices shall be those stated in FluoroSeal's quotation or, failing that, its prevailing list prices at the time of supply. Prices may be adjusted due to expiry of quotation validity, significant cost increases, or Client-requested changes. The Client shall pay all prices duly quoted or invoiced.

## TAXES

All applicable taxes, duties, and public charges relating to the manufacture, sale, or delivery of the Products shall be added to the price and paid by the Client, unless a valid exemption certificate is provided. For foreign customers with goods drop-shipped in Canada, applicable GST and, where relevant, PST shall apply unless a duly completed drop-shipment certificate is supplied by the registered third party.

## INTELLECTUAL PROPERTY

All intellectual property provided by FluoroSeal to the Client or used or created during the supply of Products and/or Services shall remain the sole property of FluoroSeal together with all rights of use and ownership to it. All such intellectual property shall be deemed confidential and treated accordingly.

## HAZARDOUS ACTIVITIES

Except as expressly authorized in writing by FluoroSeal, the Products shall not be used in any hazardous activity or environment — including, without limitation, any nuclear facility or operation — in which the malfunction of a single component could result in significant injury, death, or damage to property.

If the Products are used in any such prohibited manner, the Client shall defend, indemnify, and hold FluoroSeal harmless from and against any and all actions, claims, demands, losses, liabilities, damages, injuries, deaths, costs, and expenses (including reasonable attorneys' fees and all costs incurred by FluoroSeal in enforcing its indemnification rights) arising out of or relating to such use.

Where the Products, engineering design, or fabrication are intended for nuclear plant applications, the Client shall take all necessary steps to add FluoroSeal as an insured supplier under the American Nuclear Insurers (ANI) pool and under the Mutual Atomic Energy Reinsurance Pool (MAERP) for both property damage and liability insurance.

With respect to nuclear hazards for which the Client is unable to obtain insurance coverage, and provided FluoroSeal has expressly authorized the use of the Products for such nuclear applications, FluoroSeal's liability for any personal injury or death, property damage, or other loss directly caused by defective design, materials, or workmanship supplied by FluoroSeal shall be strictly limited to the value of the Products supplied by FluoroSeal at the time the loss occurs.

## INCORPORATION BY REFERENCE

By placing a purchase order, the Client expressly acknowledges and accepts FluoroSeal's General Sales Terms and Conditions ("**GSTC**"), which are incorporated herein by reference and available at:

<https://fluorosealvalves.com/general-sales-terms-and-conditions>, and form an integral and binding part of the contractual relationship between FluoroSeal and the Client. The GSTC apply in addition to this version of terms and conditions, and shall prevail in case of any conflict, unless otherwise agreed in writing by FluoroSeal.



GSTC FULL VERSION



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